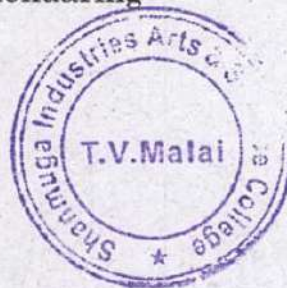


17. Discuss briefly on chain growth polymerization.
18. Write a note on polymer degradation and its types.
19. Discuss about Buna-N, Buna-S and neoprene.
20. Describe the film casting and calendaring techniques in polymer processing.



APRIL/MAY 2025

**23PECH43B — POLYMER CHEMISTRY
(Elective VI)**

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. List out the primary bonds and secondary bonds present in the polymers.
2. Draw the structure of the following :
 - (a) Polystyrene
 - (b) Nylon 6, 6
3. Explain the stereoregular polymerization.
4. Write down any two uses of Ziegler-Natta polymerization.
5. Discuss the role of surfactant in emulsion polymerization.
6. What is meant by polymer degradation?

7. Write the synthesis route of phenol formaldehyde plastic.
8. Discuss the uses of polyurea.
9. What are plasticizers?
10. What are the limitations of the calendaring technique?

SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Discuss the number average molecular mass (M_n) of a polymer with suitable examples.

Or

- (b) Explain the factors affecting T_g .

12. (a) Write a note on the degree of polymerization.

Or

- (b) Explain free radical polymerization.

13. (a) Explain interfacial polymerization and its mechanism.

Or

- (b) Write a note on photostabilizers.

14. (a) Give an account of the synthesis, properties, and applications of Nylon.

Or

- (b) Write a note on polymethylmethacrylate and polysulphur nitriles.

15. (a) Explain compression moulding with its merits and demerits.

Or

- (b) Write a note on polymer additives.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain the following characterization of polymers :

- (a) Molecular structure
- (b) Cohesive energy
- (c) Thermal methods
- (d) Chemical tests

